Information Resources Management Strategic Plan

Providing Information to Decision Makers
to Protect
Human Health and the Environment

April 1995

MESSAGE FROM THE ADMINISTRATOR

I am pleased to present EPA's IRM Strategic Plan. This plan charts a bold new course for information management at EPA. Information has a key role in the success of the guiding principles of the Agency's Strategic Plan: Ecosystem Protection; Environmental Justice; Pollution Prevention; Strong Science and Data; Partnerships; Reinventing EPA Management; and Environmental Accountability. These guiding principles are comprehensive approaches which span the Agency's traditional programs such as air, water and waste. Essential to their success is the ability to integrate data from across the Agency. This plan includes the foundation necessary for integrating data across programs--establishing facility identification standards and collecting locational data.

For example, only with integrated air, water and waste data can the overall viability of an ecosystem be assessed. With the ability to accurately identify the facilities in a community and to effectively collect and analyze environmental data about precise locations within a community, two essential tools for achieving environmental justice will be available. The ability to accurately and comprehensively assess a facility's compliance record is essential for the success of the Environmental Accountability principle. Such an assessment requires that facility information be easily combined--a standard facility identification is critical for accomplishing this.

Information management has a vital part in environmental protection. By harnessing the power of information, the Agency will make significant strides towards achieving its mission.

Carol M. Browner

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EXECUTIVE SUMMARY

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INTRODUCTION

The White House, Congress and the public are demanding a transformation of Federal agencies to results-oriented, customer-focused enterprises. EPA has developed a new Agency Strategic Plan to dramatically improve and change the way EPA does business. One of the most important tools in this challenging undertaking will be the intelligent and visionary planning for and use of information.

In *Reengineering Through Information Technology*, the accompanying Report to the National Performance Review, the executive summary discusses the critical importance and role of information technology and proposes that "public officials should view information technology as the essential infrastructure for governments of the 21st century, a modernized electronic government to give citizens a broader, more timely access to information and services through efficient, customer-responsive processes." [1]

This *Information Resources Management (IRM) Strategic Plan* provides a comprehensive outline of how the Agency will manage its information resources to embrace the challenge of creating a "modernized electronic government." This plan supports the goals and guiding principles of the Agency's Strategic Plan and the vision of a more comprehensive approach to environmental protection. In order to achieve the Agency's vision, effective information resources management is essential.

MISSION

EPA must have the ability to "collect, process, and analyze the information needed to ensure that it is managing for and achieving real environmental results." [2] To have this ability, EPA's IRM mission is focused on three primary areas. First, to provide the needed information. Second, to provide it to the Agency's decision-makers—anyone who uses information to make decisions that could impact human health and the environment. Third, to provide information to decision-makers to accomplish the Agency's mission.

> ***EPA's IRM Mission:***
>
> **To Provide Information**
> **To Decision-Makers**

Effective management of information must occur at all stages of the information life cycle, including information collection, storage, processing, and maintenance. This requires EPA to develop the appropriate methods, tools and formats to deliver integrated information of known quality. In short, EPA is committed to managing its information resources to provide the information necessary to inform and empower decision-makers to protect human health and the environment.

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[1] National Performance Review Accompanying Report, *Reengineering Through Information Technology* (Washington, D.C.: Government Printing Office, September 1993) pp. 1-2.

[2] *EPA's Five-Year Strategic Plan; The New Generation Of Environmental Protection,* USEPA, Washington, D.C., July 1994, p. 2.

VISION

EPA has adopted eight IRM vision elements which together provide for full access to integrated environmental information for effective decision making, and provide for efficient Agency operations, both internally and in partnerships. These vision elements define the optimum state that EPA will achieve in order to fulfill its mission, and detail Agency objectives for managing the Agency's information resources for the future. These vision statements are interrelated and each element will be implemented to ensure that the information necessary for environmental decision making is available.

EPA's Eight IRM Vision Elements:

- **Public Access**
- **EPA Access**
- **Data Integration**
- **Environmental Information**
- **Solid IRM Foundation**
- **Reduce Reporting Burden**
- **Electronic Management**
- **Communications**

OPERATING PRINCIPLES

EPA's six operating principles focus on three areas of behavior. The first area is an enhanced customer focus, rather than the traditional sole technical focus. The second area is one of focus on how we mange our information in terms of its value, our stewardship duties, and standardization. The final area focuses on our management culture and the need to balance various requirements and to avoid a culture of initiative "du jour."

EPA's IRM Operating Principles:

- **Customer Focus**
- **Strategic Asset**
- **Data Standards**
- **Balanced Approach**

Implementing EPA's Operating Principles will create the culture necessary to support the Agency's mission in EPA's decentralized IRM community. Each operating principle is a formal statement of the values, rules, or codes of conduct that will be adopted as part of EPA's "way of doing business." These operating principles set boundaries for appropriate behavior and provide guidelines and standards for decision making.

CORE IMPLEMENTATION STRATEGIES

EPA has defined 16 *core IRM implementation strategies* to focus the Agency's efforts and resources to implement the Agency's IRM vision. These elements represent the specific actions the Agency plans to take to achieve the IRM vision in support of the Agency's mission. While operating principles define Agency IRM culture, the core implementation strategies define specific work to be performed.

EPA's Core IRM Implementation Strategies:

- **Public Access Strategy**
- **Public Access Methods**
- **Information Locator**
- **Key Identifier Standards**
- **Spatial Analysis Systems**
- **Targeted Training**
- **Desktop Capabilities**
- **Data Requirements**

These core implementation strategies are the initial and crucial steps that EPA will undertake to implement the Agency's IRM vision. They are the building blocks that establish the foundation: the strategies that are the essential work for the implementation of the IRM vision.

PERFORMANCE MEASUREMENT AREAS

EPA is committed to measuring the progress of its IRM implementation strategies and projects to determine success. EPA has defined 3 key areas where performance measures will be defined. They are: 1) customer satisfaction, 2) value of efforts, and 3) success of implementation. There are 16 specific areas where performance measurements will be developed over time.

EPA's Performance Measurement Areas:

- **Increased value of EPA information to customers**
- **Increased customer satisfaction with access provided**
- **Improved customer ability to access EPA information**
- **Increased value of EPA information to decision makers**
- **Increased customer satisfaction with access to EPA information and available tools**
- **Increased customer knowledge and use of available tools**
- **Increased ability to integrate information resources**
- **Increased ability to assess progress of programs in achieving environmental goals at all levels**
- **Improved quality of EPA's IRM program in relation to industry's IRM best practices**
- **Improved management satisfaction with IRM stewardship and governance**
- **Reduced burden on reporting community**
- **Improved stakeholders' satisfaction with reporting process**
- **Increase in administrative processes conducted electronically**
- **Decreased staff time required to complete administrative processes**
- **Reduced total time to complete administrative processes**
- **Increased customer access to and satisfaction with communications abilities: reliability, ease of use, and range of services provided**

Based on the measurement areas defined in this plan, EPA will develop specific performance indicators and measurement goals. The challenge will be to implement appropriate performance measurement systems that provide quantifiable, relevant, reliable, standard, and verifiable results that reinforce the desired outcomes. Initially, EPA will choose one crucial area identified by its customers and build its success in measuring performance. As EPA becomes more knowledgeable about the process and collects data in the selected areas, the Agency will revise, enhance, and/or replace performance indicators as necessary. The Agency will add additional measurement goals as it moves forward in its Agency-wide performance measurement process.

CONCLUSION

As stated in the Agency's Strategic Plan, "EPA must shift toward a more comprehensive approach to environmental protection." In turn, the management of EPA's information resources must become more comprehensive in order to support the Agency's new approach to its mission. EPA's IRM Strategic Plan defines the steps EPA will take to move toward a more comprehensive approach to managing its information resources.

EPA's IRM vision provides a focus for IRM and sets a direction for the management of information resources that will begin to meet the demands of the Agency's mission. The IRM vision supports streamlining, customer satisfaction, empowered employees, and re-invention for effective and efficient programs. A full realization of the IRM vision will ensure that EPA information resources are managed to support environmental results.

EPA's IRM Strategic Plan was developed with the Agency's Senior Management, with input from program and IRM staff and external stakeholders, to ensure that the insights and wisdom of all key groups were included. The Plan defines an IRM mission and vision, and demonstrates how the management of EPA's information resources will support the Agency's mission and vision.

This document is written for those who manage EPA's information resources. Anyone who provides, collects, uses, processes, or distributes EPA's information is an information manager. While the traditional IRM community provides the technical support and "professional" tools to support the Agency's information resources, every EPA employee has a unique role to play in managing the Agency's information resources.

Chapter 1

INTRODUCTION

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PURPOSE

"*If EPA does not change its approach to managing information resources, the Agency will fail to implement its new guiding principles.*" [3] EPA's *Information Resources Management (IRM) Strategic Plan* establishes the vision and supporting framework for the changes necessary to provide EPA the information required for a new generation of environmental protection. The purpose of this IRM Strategic Plan is to establish the strategic directions for effectively managing the Agency's information resources, provide key principles which will guide the IRM work of the Agency, and identify areas to measure the success in achieving its IRM mission.

BACKGROUND

Information is a key resource to empower EPA to better protect, restore, and manage our ecosystems. Critical to the success of the Agency's environmental strategy, therefore, is the thoughtful and visionary planning and utilization of the Agency's information resources. While the guiding principles outlined in the Agency's Strategic Plan present a tremendous challenge for the effective management of the Agency's information resources, this IRM Strategic Plan presents a clear and concise set of vision elements that, when successfully implemented, will provide the necessary foundation for the support of these Agency guiding principles and the evolving priorities of environmental protection.

GUIDING PRINCIPLES OF ENVIRONMENTAL PROTECTION

- ***Ecosystem Protection***
- ***Environmental Justice***
- ***Pollution Prevention***
- ***Strong Science and Data***
- ***Partnerships***
- ***Reinventing EPA Management***
- ***Environmental Accountability***

As the Agency fully embraces and implements the concepts and practice of ecosystem protection, environmental justice, pollution prevention, and partnerships, the IRM Strategic Plan vision elements, which include data integration, public access and managing for results, will prove to be essential tools for the success of these strategic priorities. In addition, the IRM vision elements of EPA Access, electronic management, solid IRM foundation and communications will be invaluable in support of the Agency's principles of strong science and data, and reinventing EPA management.

[3] Report of the IRM Strategic Planning Task Force, NACEPT, EIAC, *Using Information Strategically to Protect Human Health and the Environment; Recommendations for Comprehensive Information Resources Management*, September 1994.

EPA has undertaken three initiatives that support the philosophical and practical tenets of these guiding principles: **Common Sense; Reengineering**; and **Community-Based Initiative**. Each of these initiatives requires a strong foundation of quality information. To that end, the IRM Strategic Plan supports these initiatives by establishing the mechanisms for insuring that quality, integrated data is accessible to the EPA workforce, its partners, and stakeholders.

EPA's **Common Sense Initiative** is based on the principle that the Agency "can best protect the environment by setting tough environmental goals while encouraging flexibility and innovation in how the goals are met."[4] The principles of the Common Sense Initiative are consistent with the National Performance Review (NPR)[5], and include: a focus on customers; empowering EPA employees to move the Agency towards meeting its goals; and encouraging market-based approaches to reducing pollution. The Common Sense Initiative also establishes the principle that EPA will actively promote pollution prevention as a standard business practice. Vision elements in the IRM Strategic Plan, including focusing on customers' needs; data integration; reduced reporting burden; electronic communication and information management; and the information necessary to manage for results will ensure that the goals of the Common Sense Initiative are supported by effective information management activities.

EPA's Eight IRM Vision Elements:

- **Public Access**
- **EPA Access**
- **Data Integration**
- **Solid IRM Foundation**
- **Reduce Reporting Burden**
- **Electronic Management**

The Agency's **Reengineering Initiative** reflects the NPR's emphasis on effective, entrepreneurial government and reinforces the cross-media orientation and principles of the Agency's *Strategic Plan.* EPA's strategic IRM vision elements are consistent with NPR recommendations for streamlining, customer satisfaction, empowered employees, and re-invention for effective and efficient programs. Reengineering requires a clear vision of how the Agency can use information technology to change the way it does business, and a commitment to making the vision a reality. Information technology is clearly a powerful tool for the support of re-invention efforts in the Agency. The IRM Strategic Plan establishes a clear vision for the intelligent planning and use of emerging information-related technologies that will provide the tools for an empowered and effective workforce. This includes promoting the use of electronic communications, electronic management of administrative work, and improved access to information by EPA employees.

EPA's **Community-based Initiative** represents a new paradigm in environmental protection by creating an integrated approach to nature as an interrelated system, involving key participants in the decision

[4] Administrator's Update, Common Sense Initiative, Number 12, July 29, 1994.

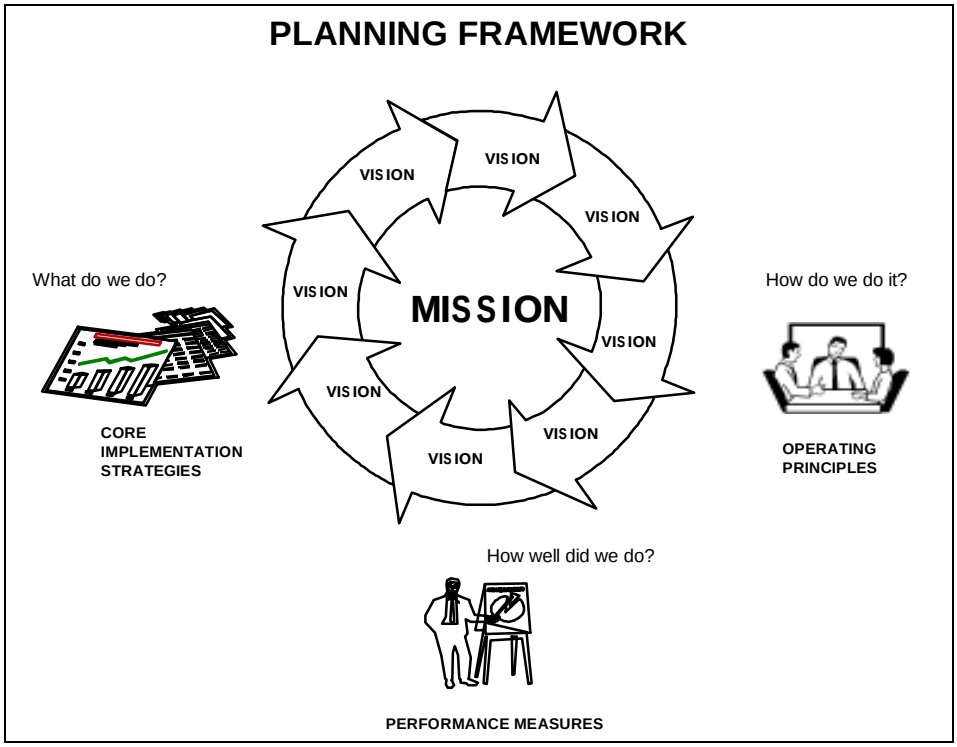
[5] National Performance Review Accompanying Report, *Reengineering Through Information Technology* (Washington, D.C.: Government Printing Office, September 1993).

making process, and strengthening the principles of environmental protection. The IRM Strategic Plan supports this initiative by promoting key vision elements for effective information management, including data integration, and improved public and employee access to information. These vision elements will allow EPA staff to more effectively conduct cross-media and spatial data analysis on specific geographic locations.

The IRM Strategic Plan brings a new focus to EPA's management of information resources—a focus on improving access to and the collection and integration of EPA's information—and supports EPA's strategy to adopt an industry-by-industry approach to environmental policy and ultimately change the way in which the Agency protects human health and the environment.

ORGANIZATION OF THE PLAN

EPA's IRM Strategic Plan presents the mission and vision necessary to guide the Agency in managing its information resources. The IRM mission and vision are the core of the IRM Strategic Plan and define how the management of EPA's information resources will support the Agency's new approach to achieving its mission. Subsequent sections of this Plan provide a detailed description of the operating principles, core implementation strategies, and performance measurement areas necessary to implement the vision and measure success.



The IRM Strategic Plan is organized in the following manner:

Chapter 1: **Introduction** - General overview of the Plan.

Chapter 2: **Mission** - A description of EPA's IRM mission.

Chapter 3: **Vision** - High-level statements of the key IRM areas in which EPA will focus its efforts to support the Agency's mission.

Chapter 4: **IRM Operating Principles** - Principles that provide guidance and set standards for the behavior of the Agency in managing its information resources.

Chapter 5: **Core Implementation Strategies** - The primary work EPA will implement to achieve its IRM vision and mission of support for the Agency.

Chapter 6: **Performance Measurement Areas** - The initial IRM performance measurement areas that will be used to measure success.

IRM STRATEGIC PLANNING APPROACH

EPA's IRM Strategic Plan is a guiding document and presents EPA's broad IRM vision and the strategies that will enable the Agency to adapt to the information technology challenges of the future. The IRM Strategic Plan is not intended to be an all inclusive planning document. Detailed planning documents will specify how the vision and implementation strategies included in this IRM Strategic Plan are carried out in daily operations.

This Plan addresses information resource management for the Agency as a whole rather than presenting ongoing, program specific, IRM operational efforts currently underway in the Agency's program offices. Although the IRM Strategic Plan is embracing comprehensive and Agency-wide approaches to information resources management, the need and support for program-based plans and investments in information resources will continue.

This IRM Strategic Plan is a dynamic, working document and will be revised to reflect changes in the Agency's Strategic Plan, legislation, information technology, and other relevant factors as they develop.

IRM STRATEGIC PLAN DEVELOPMENT

The IRM Strategic Plan was developed by a team with broad representation including the Agency's Senior Management, program and IRM staff, external stakeholders, and partners. EPA used this approach to ensure that the Plan included the insights and wisdom of these key groups.

EPA Senior Management from across the Agency were appointed by the Administrator to participate in the Executive Steering Committee (ESC) for IRM.[6] The ESC is chaired by the Assistant Administrator for the Office of Administration and Resources Management (OARM) who is the Designated Senior Official (DSO) for IRM at EPA. The ESC for IRM received input from EPA's external stakeholders and

[6] The membership includes the Deputy Chief of Staff; all Assistant and Associate Administrators; four Regional Administrators; the General Counsel; the Inspector General; and five State representatives.

partners and the Agency's program and IRM staff. The ESC for IRM will continue to be instrumental in subsequent phases of the Agency's strategic planning process.

EPA's external stakeholders and partners provided recommendations to the Agency's IRM Executive Steering Committee through a Federal advisory committee, the National Advisory Council for Environmental Policy and Technology (NACEPT). NACEPT is a formally chartered committee charged with providing the Administrator of EPA with advice and recommendations on a broad range of environmental issues. NACEPT has several standing committees, including the Environmental Information and Assessment (EIA) Committee which formed an Information Resources Management (IRM) Strategic Planning Task Force to provide recommendations to EPA on strategic IRM issues. This NACEPT Task Force included members from five states, one local government, three public and environmental interest groups, two Federal agencies, and one academic institution. The Task Force delivered two reports to the ESC summarizing the IRM issues that the Task Force identified as crucial to the success of EPA's new approach to protecting human health and the environment.

Program and IRM staff played an important role and provided input throughout all stages of the strategic planning process. Workgroups comprised of program and IRM staff from across the Agency provided recommendations to the ESC for IRM on all elements of the IRM Strategic Plan. Over 100 staff were engaged in the process of developing recommendations and proposals for the ESC's consideration.

RESPONSIBILITY FOR IRM

The mission of the Agency's IRM program, as articulated by this Plan, is dynamic and ambitious, and has been developed to provide a strategic foundation for the effective management of the Agency's information resources. The Agency's management, partners and stakeholders as well as the traditional IRM community each have specific and unique roles and responsibilities. Senior management establishes the vision, budgets the resources, and oversees the work. The Agency's partners and stakeholders contribute valuable information as well as use and provide feedback on information received from EPA. Regulation writers provide definitions for the information that the Agency collects. Congress provides statutes and authorities. EPA's program managers provide a vision for their data, define how the data is used within their program, and provide the means (tools) and resources (dollars) for using the data. Scientists collect and analyze the information needed to assist EPA in improving the environment. The traditional IRM community provides the technical skills to accomplish the work. Each of the members of EPA's community are active participants in the management of the Agency's information resources in order to effectively support the mission and vision of the EPA.

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Chapter 2

MISSION

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EPA's IRM

TO PROVIDE INFORMATION TO DECISION-MAKERS TO PROTECT HUMAN HEALTH AND THE ENVIRONMENT

TO PROVIDE INFORMATION

The core focus of the management of information resources is providing information. For example, to fulfill EPA's Common Sense Initiative, EPA must manage its information resources to provide integrated information to the public, businesses, educational, environmental, and community-based organizations, other Federal agencies, and governmental entities. The provision of information requires EPA to wisely manage all stages of the information life cycle, including information collection, storage, processing, and maintenance. Providing information requires systems and technology that support the management of the information throughout its life cycle. Finally, to provide information, the Agency must develop the tools necessary to ensure that integrated information of known quality is available and is delivered using methods and formats appropriate to the target audience.

TO DECISION MAKERS

Ultimately, anyone who uses information to make decisions that could impact human health and the environment is a potential customer of EPA's information resources. These customers ultimately influence the ability to protect our environment. Decision makers include everyone from the public making consumer choices, academics studying environmental issues, local governments making land use decisions, EPA support staff processing travel vouchers and procurement requests, environmental scientists studying ecosystems, to senior managers making policy and operational decisions. EPA is committed to managing its information resources to provide the information necessary to inform and empower these decision makers to protect human health and the environment.

TO PROTECT HUMAN HEALTH AND THE ENVIRONMENT

Ultimately, the purpose of managing information resources is to support the Agency's mission. Information is the basis of knowledge about the environment we seek to protect. As public stewards, EPA employees must have the information to make wise use of the public's resources. In short, information is critical to the success of the mission of the Agency.

EPA's Mission

"The people who work at EPA are dedicated to improving and preserving the environment in this country and around the globe. Highly skilled and culturally diverse, we work with our partners to protect human health, ecosystems, and the beauty of our environment using the best available science. We value and promote innovative and effective solutions to environmental problems. We strive to protect and sustain the productivity of the natural resources on which all life and human activity depend." [7]

[7] *EPA's Five-Year Strategic Plan; The New Generation Of Environmental Protection*, USEPA, Washington, D.C., July 1994.

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Chapter 3

IRM VISION

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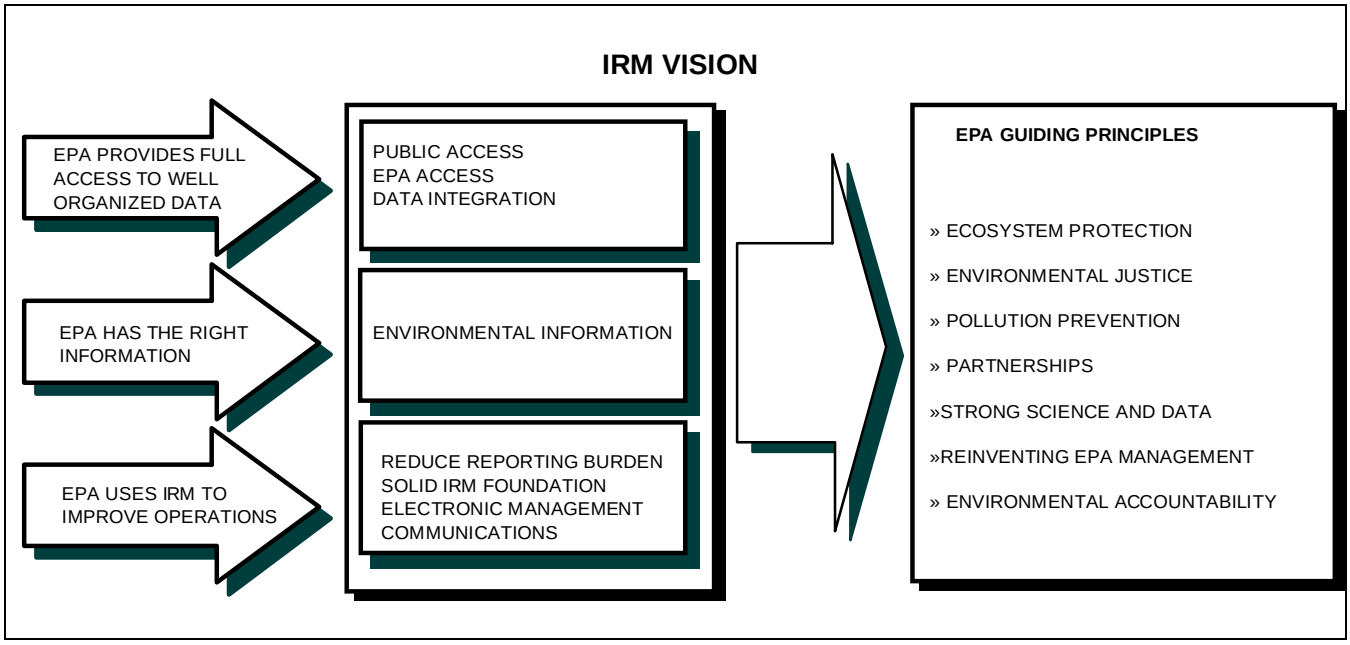
EPA's IRM

THE AGENCY'S IRM VISION IS COMPRISED OF EIGHT INTERRELATED ELEMENTS

EPA has adopted eight IRM vision elements which provide for full access to integrated environmental information for effective decision making, and efficiency of Agency operations, both internally and in its partnerships. These vision elements define the optimum state that EPA will achieve in order to fulfill its mission, and detail Agency objectives for managing the Agency's information resources for the future. These vision statements are interrelated and each element must be implemented to ensure that the information necessary for environmental decision making is available.
EPA's vision can be thought of in 3 parts. First, EPA will ensure full access to well organized



information. Second, EPA will have the environmental information it requires. Finally, EPA will use IRM to improve its operations and support reengineering. The eight elements of the IRM vision provide a clear statement of the various aspects of these 3 concepts.

Implementation of the Agency's IRM vision will improve the usability and accessibility of EPA's information and ensure the information necessary for environmental decision making is available. At the same time, these improvements will help reduce costs by eliminating redundant data collection and storage practices and ensuring better use of technology. Better use of technology will help EPA work smarter as appropriate tools are utilized.

EPA's Eight IRM Vision Elements

PUBLIC ACCESS	▸ EPA will actively disseminate and provide access to its information to educate and empower its partners and the public.
EPA ACCESS	▸ EPA employees will have the technical resources and means to access the information needed to perform their duties.
DATA INTEGRATION	▸ EPA will ensure its data can be integrated to support comprehensive environmental protection and public access to environmental information.
ENVIRONMENTAL INFORMATION	▸ EPA will effectively collect and manage the information that the Agency and its partners require in order to manage for environmental results.
SOLID IRM FOUNDATION	▸ EPA will establish a solid IRM foundation to efficiently meet the Agency's evolving mission and program needs.
REDUCE REPORTING BURDEN	▸ EPA will improve its data collection quality and reduce reporting burdens through innovative methods.
ELECTRONIC MANAGEMENT	▸ EPA will manage electronically to empower staff, reduce cost, and improve management results.

The ESC vision for IRM was defined with input from program and IRM staff, to guide the Agency's IRM strategic planning efforts. To define IRM's support for the Agency's mission, the Agency's approach to its mission as embodied in the Agency's guiding principles, its initiatives, and in legislative mandates was examined. The matrix in Appendix B identifies the support each of the IRM vision elements offers to the Agency's guiding principles and mission.

PUBLIC

EPA WILL ACTIVELY DISSEMINATE AND PROVIDE ACCESS TO ITS INFORMATION TO EDUCATE AND EMPOWER ITS PARTNERS AND THE PUBLIC

The Agency will disseminate its information and ensure that the data is accessible through a variety of ways: publications, electronic media, or person-to-person contact. EPA will provide access appropriate to the audiences, including: a directory of its information; data organized into subject areas such as facility identification, parent corporation, chemical abstract number, and spatial location; and descriptive elements such as the original purpose, source, and limitations of the information. EPA will seek opportunities to work with other partners for efficient information dissemination while EPA's policies will ensure appropriate security.

Mission Support:

"Since the inception of EPA over 20 years ago, the nature of environmental protection has become increasingly complex. It has become clear that all stakeholders must work together better to further the nation's environmental goals." [8] As noted in the Agency Strategic Plan, EPA's partners will have access to the appropriate types of EPA information to strengthen their efforts to protect the environment and human health. Access to EPA information will provide:

- Empowered environmental justice and pollution prevention partners to prevent pollution;

- Improved academic partnerships with the Agency to promote better science;

- Increased Federal, state, local, and tribal governmental partners' capability to make environmental decisions;

- Improved corporate environmental decisions, thereby reducing long-term costs, potential liabilities, and public concern; and

- Empowered citizens to participate in community environmental and human health issues.

Active dissemination will ensure that the general public and EPA's partners are aware of potential issues and have the information necessary to make sound environmental decisions. Accurate, useful information placed in the hands of the general public and EPA's partners promotes a market-based approach—an approach in which environmentally-aware choices are made regarding technology and products that move the country toward preventing pollution and protecting the environment. The use of information by others will create a valuable feedback mechanism regarding the quality and value of EPA's data and will enable EPA to improve the quality and usefulness of its data for future users.

[8] *EPA's Five-Year Strategic Plan; The New Generation Of Environmental Protection,* USEPA, Washington, D.C., July 1994, p. 28.

EPA ACCESS

EPA EMPLOYEES WILL HAVE THE TECHNICAL RESOURCES AND MEANS TO ACCESS THE INFORMATION NEEDED TO PERFORM THEIR DUTIES

EPA will provide employees with access to a minimum set of desktop computing resources and communication tools, including voice and data communications, to ensure that they have the information necessary to accomplish their duties. Employees will have the tools they need to access a full range of information resources including financial, programmatic, environmental, economic, geographic, and scientific information. Access to this information will be easy and transparent.

> "We must allow the people who face decisions to make decisions. We must do everything we can to make sure that when our Federal workers exercise their judgement, they are prepared with the best information, the best analysis, and the best tools we have to offer."
>
> Vice President Al Gore
> *The Report of the National Performance Review*

Employees will have desktop access to information resources that encompass Agency-internal holdings as well as the holdings of EPA's partners. Information will be available in specialized form through primary-use (program-specific) systems as well as aggregate and cross-media forms. Information will be organized based on common data identifiers such as facility identification (ID), parent corporation, chemical abstract number, and spatial location. The information will include descriptions of the original purpose, source, and limitations. EPA employees will have library-like support to locate and obtain information in all forms, including database, text, and graphics records. EPA will secure appropriate information to prevent its inappropriate release.

Mission Support:

In order to guide comprehensive approaches to protect human health and the environment such as ecosystem protection, pollution prevention, environmental justice, and environmental accountability, EPA employees must be able to organize, combine and analyze information from many sources. EPA's automated systems and databases, which are traditionally single media and/or program-specific, were not designed to support comprehensive, cross-media use. EPA will manage and organize its information assets to support aggregate and cross-media strategies such as geographic targeting, ecosystem-wide planning, and integrated cross-media approaches for key economic sectors. This will provide new and more powerful tools and technical resources to EPA's scientific community, thus enhancing EPA's capability to perform sound science and providing a broader range of data for decision making.

Access to information and automated tools will enable many re-invention strategies. Frequently, re-invention and streamlining are possible because electronic access to information allows fundamental changes in processes. EPA will provide its employees access to the information and automated tools necessary to support re-invention at EPA.

DATA INTEGRATION

EPA WILL ENSURE ITS DATA CAN BE INTEGRATED TO SUPPORT COMPREHENSIVE ENVIRONMENTAL PROTECTION AND PUBLIC ACCESS TO ENVIRONMENTAL INFORMATION

EPA will standardize its key information identifiers to ensure that data from multiple sources can be consolidated into subject areas such as industrial sector, facility identification, parent corporation, chemical abstract number, spatial location, and taxonomy. The Agency will develop tools to integrate and coordinate information reporting requirements, analysis, and display of environmental information. To successfully integrate EPA's data, the information needs of primary and secondary users will be identified and considered when legislation, regulations, and data collection tools are developed and modified.

Mission Support:

Integrated information is a key to EPA's success in implementing comprehensive strategies such as ecosystems, pollution prevention, environmental justice, and holistic environmental accountability. To fully understand how to protect the environment and human health, EPA must have the ability to conduct analysis across the spectrum of media and exposures. Integrated data will facilitate these analyses and thus, the implementation of the Agency's comprehensive approaches to environmental protection. Thus, integrated data is a key asset that the Agency and its partners can use to manage and make environmental decisions. Access to integrated data will provide:

- EPA staff the ability to conduct cross-media analyses to identify stressed or threatened ecosystems and identify and support the needs of affected communities and populations;

- The general public and EPA's partners the information so that they are able to make environmentally-sound decisions;

- EPA's scientists with better organized and more useful Agency data;

- EPA's staff and managers a better ability to aggregate and consolidate information to make informed decisions; and

- EPA the ability to target comprehensive enforcement actions across all media.

All disciplines will benefit from being able to easily access, combine, and analyze information from a variety of media and exposures. Integrated information sources will permit the exploration and understanding of issues more thoroughly and with a broader perspective than possible with a single-program or single-media approach. The public and EPA's partners will benefit because they can access data organized into useful subject areas such as industrial sector, parent corporation, spatial location, and chemical abstract name, on a cross-media basis. Integrated data will empower EPA's current partners and be a key point in forming new information-based partnerships.

ENVIRONMENTAL

EPA WILL EFFECTIVELY COLLECT AND MANAGE THE INFORMATION THAT THE AGENCY AND ITS PARTNERS REQUIRE IN ORDER TO MANAGE FOR ENVIRONMENTAL RESULTS

EPA will identify the information it needs to measure results and manage its work, determine gaps, and actively seek new sources of information to fill the information gaps. EPA will only collect new data to fill critical gaps that cannot be filled in other ways. EPA will foster data partnerships to share information and to reduce the data collection and handling burdens of all parties. EPA will develop the infrastructure necessary to use externally managed information and to exchange information with its partners. Data collection decisions will be enhanced as trained IRM personnel help program managers determine data requirements and identify information resources as regulations are written.

Mission Support:

"EPA must...collect, process, and analyze the information needed to ensure that it is managing for and achieving real environmental results." [9] Managing for environmental results requires new and different information from that which EPA has traditionally collected. EPA's information systems currently have substantial resource, program, and regulated community information, but staff often do not have the information necessary to assess the results of the Agency's activities. EPA and its partners need this information to analyze and solve complex cross-media environmental problems.

EPA will identify and acquire or obtain access to information so that EPA's managers and its partners have the data they need to make sound decisions. With this information, the Agency and its partners will have the ability to plan strategically and develop, operate, and evaluate programs based on a clear understanding of environmental complexities.

> "Management isn't about guessing, it's about *knowing*. Those in positions of responsibility must have the information they need to make good decisions."
>
> Vice President Al Gore
> *The Report of the National Performance Review*

Management for environmental results requires that information and information access be obtained and effectively managed to provide timely information of known quality to those that must make the decisions that impact the environment. This information, when placed in the hands of decision makers, supports ecosystem protection, ensures environmental justice, and promotes compliance with environmental laws and regulations. To effectively manage for environmental results, EPA will set environmental goals and assess its progress toward achieving its goals. This assessment will provide management with the ability to refocus its efforts and resources and ensure that EPA's activities are leading to real improvements in the environment.

[9] *EPA's Five-Year Strategic Plan; The New Generation Of Environmental Protection*, USEPA, Washington, D.C., July 1994, p. 2.

SOLID IRM

EPA WILL ESTABLISH A SOLID IRM FOUNDATION TO EFFICIENTLY MEET THE AGENCY'S EVOLVING MISSION AND PROGRAM NEEDS

IRM must fulfill its part of EPA's pledge to "ensure integrity and effective management of its programs and resources." [10] A solid IRM foundation utilizes sound information management tools, policies, and standards which will be developed through an open participatory process involving all stakeholders. These tools, policies, and standards include such things as integrated planning and budgeting, performance measurements, and data standards to ensure maximum return on IRM investments. A solid IRM foundation will allow EPA to better fund ongoing operational needs, demonstrate financial responsibility, secure funding for Agency IRM goals, and ensure a solid IRM foundation for future users of EPA's information resources.

EPA will maintain a strong Executive Steering Committee for IRM and a strong management champion for IRM to guide its IRM program. EPA will strive to obtain the necessary resources to retain capable and trained IRM staff who will ensure strong program IRM capabilities. Capable staff will provide information services, technology and telecommunications support, and basic information such as demographic and geographic data to support users.

Mission Support:

As EPA's understanding of the complex world of environmental protection continues to evolve, the Agency's success in achieving its goals will greatly depend upon sound information resource management. EPA's information resources are, and will remain, the one asset that can be used repeatedly and in multiple ways, increasing in value with use—unlike many other assets.

EPA will manage its information resources efficiently and effectively in order to provide a solid foundation for Agency and program use of information. Sound IRM practices will ensure EPA has well organized, high quality information that can be accessed by everyone. The availability of timely and useful information is critical in ensuring ecosystem protection, environmental justice, environmental accountability, and strong science. This information also educates and empowers the public and EPA's partners to encourage pollution prevention and foster the exchange of data and innovative ideas.

Some tension will always exist between meeting specific short-term needs and the need to follow sound IRM policies and procedures to provide for the long-term efficiency and effectiveness of information management. The need for flexibility and innovation to meet pressing and/or unique short-term needs must be balanced against the long-term benefits to be gained from compliance with strong standards and policies. Because there is no single balance point between innovation and compliance with standards, EPA will guide the management of information resources by maintaining a strong Executive Steering Committee for IRM and a commitment to strong leadership and sound management of EPA's information resources.

[10] Ibid., p. 3.

REDUCE REPORTING

EPA WILL IMPROVE ITS DATA COLLECTION QUALITY AND REDUCE REPORTING BURDENS THROUGH INNOVATIVE METHODS

EPA will implement innovative data exchange methods to reduce the burden associated with collecting and reporting data. The innovative methods will include, but will not be limited to, Electronic Data Interchange (EDI), Optical Character Recognition (OCR), document imaging, and electronic forms. EPA will utilize benchmarking techniques to measure its success in reducing the information providers' data collection and reporting burden. Data collection standards will be based on a cooperative process that emphasizes the accuracy and usefulness of the data while recognizing that the Agency's IRM decisions can define and establish standards for the market. EPA will seek to leverage this impact to the benefit of its information supplying partners.

Mission Support:

EPA has a wide range of complex reporting requirements that simultaneously impose burdens while also providing valuable information about ecosystems and pollution that often are not otherwise obtainable. EPA recognizes the need to commit to keeping reporting burdens as low as possible while collecting the information needed to protect human health and the environment. Therefore, EPA will strive to reduce reporting burdens and associated costs on the regulated community and other partners through increased use of electronic exchange, elimination of duplicative reporting, better organization of reports, and other innovative techniques.

By using new and innovative methods to exchange data, EPA will enhance its partnership with the regulated community. States, which are major data suppliers, will not only benefit from a reduced reporting burden, they will be able to provide and access information in a more timely and accurate fashion than previously possible. Innovative techniques such as electronic reporting will improve data accuracy and integrity by eliminating a significant source of errors: the re-keying of data from hard copy reports into EPA systems. Eliminating re-keying errors will benefit efforts to improve environmental science and data for EPA and its partners.

EPA's Common Sense Initiative is one on-going effort that encourages innovation and focuses on bringing Government officials, environmentalists, and industry leaders together "to create strategies that will work cleaner, cheaper, and smarter" to protect human health and our natural resources. This initiative places an emphasis on harnessing the expertise of EPA's partners and stakeholders and will make environmental information collection easier on industry. Reporting will be easier, information will be integrated, and duplication will be eliminated.

Many innovative methods of data exchange have also proven useful to large companies in their efforts at re-invention and streamlining. Many management experts believe that streamlining and re-invention in the private sector are the realization of the cumulative cost savings from prior years of automated techniques such as electronic data exchange.

ELECTRONIC MANAGEMENT

EPA WILL MANAGE ELECTRONICALLY TO EMPOWER STAFF, REDUCE COST, AND IMPROVE MANAGEMENT RESULTS

EPA will use innovative electronic management methods to reduce paper consumption, time delays, costs, and data quality problems. EPA will use electronic forms and signatures to reduce the copying, movement, and reliance on paper throughout the Agency's business and program processes. The Agency will electronically collect, process, disseminate, and store information. EPA will develop procedures to meet Federal requirements for creating and maintaining official records electronically. This will allow EPA to substitute electronic storage for paper backup.

EPA will also investigate and implement appropriate electronic commerce techniques to facilitate work with its business partners. EPA will establish collaborative efforts with its internal and external partners to implement electronic information management. Interoperability among the various parts of the technology infrastructure will be required so that this process can proceed efficiently.

Mission Support:

EPA has "committed to reinventing its management systems and processes so that there is renewed and continual emphasis on quality, efficiency, and integrity." To do this, EPA has committed to "make full use of advanced technologies to cut costs, boost productivity, enhance communications, and speed the flow of information." [11] EPA requires accurate, complete, and timely data to fulfill its mission, support Agency and programmatic activities, and meet its mandated requirements. Large amounts of data are required by EPA's managers and partners in making decisions for running the "business" of the Agency as well as for protecting the environment. The conversion from paper-supported decision making to electronic-based decision making empowers EPA and its partners to more effectively and efficiently manage environmental activities and share innovative approaches and information to protect the environment.

Electronic management will be a major enabler of re-invention and streamlining at EPA. The substitution of electronic management for paper intensive processes will provide an opportunity to redesign EPA's business processes with the goal of improving results and reducing cost. Potential improvements due to electronic management include eliminating process steps and eliminating redundant processing, which will reduce cost and process cycle time. EPA's electronic management focus will set an example for other government agencies to follow.

Electronic management techniques for sharing and managing information will provide tools to reduce paper consumption. For example, to support EPA's internal pollution prevention efforts, paper backups could be eliminated by maintaining official records electronically.

[11] *EPA's Five-Year Strategic Plan; The New Generation Of Environmental Protection*, USEPA, Washington, D.C., July 1994, p. 38.

COMMUNICATIONS

EPA WILL ENABLE "PEOPLE-TO-PEOPLE" ELECTRONIC COMMUNICATIONS

The People-to-people communication element envisions the development and maintenance of state-of-the-art voice and electronic mail communication capabilities. EPA will develop and implement a technology infrastructure to ensure that these capabilities are fully integrated throughout the Agency. In particular, EPA will develop a corporate Local Area Network (LAN) environment and maintain its Wide Area Networks (WANs) to provide all EPA offices and partners with access to voice and electronic mail.

The Agency will ensure that the network has support services sufficient for the needs of EPA staff. The Agency will ensure that the communication technologies are easy to use. EPA will develop training and orientation programs to ensure that staff have adequate training and are empowered to use and understand the available communications capabilities.

> "Empowerment ... is a disorderly and almost meaningless gesture unless people doing the actual work are given the tools and knowledge that self-direction demands."
>
> General Electric Executive Vice President Frank Doyle
> *Reinventing Government Summit*

Mission Support:

People-to-people communication is critical to the success of EPA and its partners in achieving its goals because it enables individuals to communicate easily across organizational and geographic distances. Communication is the underpinning for EPA's relationships with its partners. The connections with EPA's partners further the dissemination of innovative solutions to environmental problems — they facilitate technology transfer. Teamwork within EPA and between the Agency and its partners will be greatly enhanced by better communication via LANs, WANs, and advanced voice systems.

EPA has launched initiatives and established policies that require a solid foundation for communication between the Agency and its partners. The Common Sense Initiative encourages the exchange of information and solutions between EPA and its industry partners. EPA's policy for EPA/State partnerships establishes a framework for the relationship between EPA and the States in developing and implementing effective environmental programs. This policy is based on "open, honest, and frequent communications" between EPA and its State partners. Electronic communication capabilities are essential to the success of these and other initiatives and policies. These capabilities enhance EPA's partners' ability to understand EPA decisions and provide EPA decision makers with crucial insights from its partnership community.

Advanced electronic communication capabilities are also critical to the success of EPA's reengineering and streamlining efforts. Electronic communication capabilities will be the key to cementing together the organizational structure that will result from Agency streamlining efforts.

Chapter 4

OPERATING PRINCIPLES

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OPERATING PRINCIPLES

EPA's six operating principles focus on three areas of behavior. The first area is an enhanced customer focus, rather than the traditional sole technical focus. The second area is one of focus on how we mange our information in terms of its value, our stewardship duties, and standardization. The final area focuses on our management culture and the need to balance various requirements and to avoid a culture of initiative "du jour."

EPA's Operating Principles will create the culture change necessary to achieve the Agency's mission. Each operating principle is a formal statement of values, rules, or codes of conduct that will be adopted as part of EPA's "way of doing business." These operating principles set boundaries for appropriate behavior and provide guidelines and standards for decision making.

These operating principles define how the Agency will work together to reach its vision. They will bring consistency and cohesiveness to EPA's decentralized IRM community, and offer a higher probability of success in accomplishing the Agency's mission. As a regular part of the value system of the Agency, these six operating principles will ensure that appropriate philosophies, values, attitudes, and thinking are applied to the IRM decision making process of the Agency.

In defining these operating principles, EPA answered the question:

> *What perceived or actual characteristics of the Agency's culture must we change in order to be*

The Agency's operating principles describe the desired behavior or value changes that will create the optimal environment for achieving the IRM vision.

The operating principles identify realistic, achievable, understandable, and beneficial attitudes that have universal application across Agency programs and boundaries.

These operating principles reflect a commitment by the IRM community to change the way EPA conducts its day-to-day business and they have the endorsement of the Senior management of the Agency. The result of implementing these operating principles is a customer-focused organization whose culture is mission-driven, has the participation of all employees, and has a greater chance of success towards achieving it's vision.

Realistic **-** The principles accurately reflect values, rules, or codes of conduct that are advocated and actively supported by upper management.

Achievable **-** The principles reflect a value or behavior that can actually be "performed" by targeted EPA staff and will require little if any training.

Understandable/Succinct **-** The principles are clear and understandable to the target audience.

Beneficial **-** The principles provide an identifiable benefit to the Agency.

Consistent Across Organizational Boundaries **-** The principles have the same interpretation at all organizational levels across the Agency.

CUSTOMER FOCUS

EPA WILL FOCUS ON CUSTOMER NEEDS

Customer focus will be the watchwords for EPA. EPA will identify its information customers. Today, EPA has a good understanding of the primary customers of its programmatic and administrative systems. A complete customer focus means EPA will also identify its secondary customers, and their specific needs and uses for information. Secondary customers can include both internal and external users of EPA information. Staff using Toxic Release Inventory (TRI) data, water permit data, and census data for an analysis are probably secondary users for some of the information. However, they are still important customers whose needs will be considered.

EPA will learn and consider the needs of its primary and secondary users, maintain open communications with its customers, and avoid unilateral decisions without consulting our customers. EPA's information customers will receive quality service and be considered at all stages of the information lifecycle. Everyone involved in the lifecycle of information, from regulation writers, to system developers, to managers of programs will maintain a customer focus.

Therefore, EPA will increase its focus on accurately determining and confirming customer needs and wishes. EPA will confirm and validate with IRM customers often, to avoid potential misdirection of IRM resources and functions.

Vision Support:

Only when EPA understands the needs of its information customers can EPA meet their needs. As customers' information needs are fulfilled they are empowered and educated to make wise decisions which impact the environment. The Toxic Release Inventory (TRI) has proven this transforming power of providing strategic information. TRI has demonstrated that EPA has customers for information beyond the traditional line staff. Now EPA commits to focus on its customers and provide the information services necessary to use the strategic power of information.

A customer focus will allow EPA to understand and meet the needs of customers working beyond our traditional approaches. By focusing on customers, EPA's information resources can be more effectively used, the return on investment improved, and comprehensive approaches to ecosystem protection supported. This approach will also ensure that EPA's information resources have value and meet the needs of future users.

STRATEGIC

EPA WILL MANAGE INFORMATION AS A STRATEGIC ASSET.

EPA commits to a new vision of information. No longer will information be used primarily to track, monitor, and record program activities. EPA will recognize and harness the tremendous power of information to transform itself, empower the public, and educate. EPA's managers will:

- manage information as an Agency asset,
- manage information as an essential element of their programs, and
- manage information strategically, beyond "counting beans."

No longer will EPA information assets be held as the sole possession of individual programs. While program's have a stewardship responsibility for the information, they must see this in a larger context than solely their own needs. EPA managers will recognize that information is a strategic asset that has value to others and can be used in a strategic fashion. While EPA's information will continue to serve the primary users of the information, EPA will also manage its information holdings to meet the needs of the broader community of other Agency users, partners, and the public. This change in culture will require a transformation in how EPA budgets for information systems, decides upon data collection strategies, and disseminates its information. EPA's managers will ensure that as they develop their programs, regulations, etc., that information resource issues are part of the issues considered. Managing EPA's information as a strategic Agency asset demands the attention of all EPA's senior managers.

Vision Support:

Managing EPA's information as an Agency asset will support the IRM Vision and the Agency's mission in many ways. It will provide the culture and institutional rules to:

- support ecosystem and spatial analysis,
- transform EPA into an integrated Agency,
- support holistic approaches to environmental justice,
- support a sector approach to industry,
- allow greater return on our IRM investments, and
- permanently alter EPA's ability to successfully fulfill it's mission.

Information managed as an Agency asset will allow EPA to move beyond a traditionally fragmented approach to environmental protection towards a new approach to integrate programs, empower community-based approaches, educate the public, and improve ways in which we do business in the future.

INFORMATION

EPA ACCEPTS STEWARDSHIP RESPONSIBILITY FOR INFORMATION

Information produced and received by EPA is information entrusted to the Agency by the citizens of this country. EPA accepts responsibility as stewards of these information resources. EPA is an information agency. EPA does not produce widgets, maintain parks, or fight wars. EPA's products are information-based products, whether they be rules, environmental education, new science, or enforcement actions. Information is a common thread in all of EPA's work. Thus, EPA will view information management as a core function that is everyone's responsibility, and is essential to the mission.

The role of stewardship requires EPA to treat information as an asset that has a long life. EPA will look beyond the immediate use of the information, realizing information collected, stored, reported, and analyzed has usefulness long after the immediate need has ended. Therefore, EPA will strive to ensure it's information resources are of known quality, standardized, secure, and accessible.

As EPA's approach to protecting human health and the environment evolves from a media-based, command and control approach to a cross-media approach, the IRM community will establish a partnership among all units. The central IRM community's stewardship role is to create an infrastructure of technology, systems, data, and management integrity that allows integrated work across the Agency. The programs, which are stewards of the systems and data, will accept the role of steward of the data for all customers, present and future. EPA's program and IRM staff will foster working relationships that enhance and strengthen the stewardship of information throughout the information lifecycle.

Vision Support:

EPA's acceptance of its stewardship role will provide the foundation for EPA's vision of an integrated, common sense approach to protection of the environment. As EPA practices stewardship, EPA's staff gain greater access to information that can be used more easily, with greater confidence, and across traditional program barriers. As EPA builds a strong infrastructure and partnerships among programs are formed, EPA and its partners will benefit from enhanced usefulness of information.

Just as EPA's new approach to environmental protection will not occur overnight, so too it will take many steps and much time to instill a new information stewardship ethic. However, the benefits are clear. Information that is cared for as an asset, that is treated as a trust for all staff, EPA's partners, and the public, is the ultimate weapon in EPA's mission to protect the environment.

DATA

EPA WILL STANDARDIZE ITS DATA

EPA commits to standardize its data, thereby increasing the value and usefulness of its information resources. EPA will;

- establish and adopt appropriate standards for its information resources,
- utilize standards throughout the lifecycle of information resources,
- allow diversity where appropriate, but
- prefer to use and embrace standards where possible.

The Agency will reward those who are compliant with standards, and assist those who are not. In effect, no longer will efforts to implement data standards bear the burden of proof. Efforts to standardize EPA's information will be presumed the correct choice, unless clear and convincing evidence demonstrates why the data should not be standardized.

Vision Support:

Data standardization provides a multitude of clear advantages to EPA. Data which is standardized is data which:

- has greater value, because it can be used more widely and readily (quickly),
- lends itself to support of data integration, or comprehensive, cross-media solutions,
- is more easily maintained and adapted to meet new and changing requirements for environmental information,
- decreases the chances of inconsistent or contradictory data,
- makes the Agency's information resources more understandable, and
- reduces the potential for data duplication.

As EPA is successful at applying data standards, the Agency will gain many benefits. First, EPA will be able to integrate its information across program lines. This supports the Agency's strategic directions of dealing with sectors of industry, not separate media of a single plant. It provides the basis for using information to understand and protect ecosystems. It supports environmental accountability by facilities on a holistic basis. Second, data standardization will allow EPA to consolidate many of its data collection requirements. Consolidated data collection requirements will greatly reduce the financial burden on information providers. Data collection methods that are less burdensome for data generators will promote data accuracy and improve partnerships. Finally, data standardization will enable EPA to more

effectively share information both internally and externally. Standardized data is useful, understandable, and sharable.

BALANCED

EPA WILL PURSUE A BALANCED APPROACH TO THE COMPETING NEEDS OF EFFICIENCY AND FLEXIBILITY

EPA is committed to achieving a balance between the often competing demands of efficient controls and responsive innovation. EPA will seek efficient use of its information resources while maintaining an ability to innovate, experiment, and respond to customer needs. To balance these competing needs, EPA will:

- evaluate the costs and benefits of different technologies,
- remember that little things often become big things that count in the long run,
- ensure customers are the focus of services,
- allow the use of alternative or non-standard approaches where justified,
- exercise controls only at critical leverage points, such as those ensuring interoperability, data standardization, and data accessibility, and
- adhere to good management practices which demonstrate clear and convincing stewardship of all resources, while eliminating unnecessary, burdensome rules whose value is exceeded by the cost.

EPA will constantly strive to empower employees with the necessary tools and support, while meeting its responsibility to all information customers and ensuring the value and usefulness of its information assets.

Vision Support:

A careful balance will ensure that EPA's employees have the tools and freedom necessary to use information to accomplish their jobs. Empowered employees will be more productive, make better decisions and support EPA's mission. Programs will have the freedom and ability to respond to their needs in a timely and effective fashion. With a proper balance, employees are freed from encumbering rules. However, rules can also free people from having to make all the decisions when some decisions are already made, and a manager can move on to other issues.

A careful balance also allows EPA to ensure the usefulness of its information resources. The prudent use of key leverage points will ensure that EPA advances data integration, reusability, and accessibility. EPA's employees are also served best when technology is transparent to users, when they don't have to learn new technology for similar work with each new position.

Finally, EPA's mission is advanced most when EPA makes efficient use of its funds in all aspects of its work. EPA, as a public funded agency, must demonstrate the highest attention to stewardship of its financial, information, and human resources. EPA cannot attract the necessary resources to do its job if the public, Congress, and others are not comfortable with the Agency's ability to effectively use those resources. Through careful balancing of controls and empowerment, EPA will demonstrate it deserves the support of all.

STAY THE

EPA WILL CONSISTENTLY SUPPORT LONG-TERM GOALS

EPA will "stay-the-course" on long-term efforts by embracing quality strategic planning for IRM resources at all levels of the organization. The Agency will view these strategic plans as working documents, and use them to guide the implementation of information resources. EPA recognizes that each tactical step is an important part of the whole, and commits to a focus on long-term visions for IRM. The Agency's IRM strategic plans will align resources, skills and strategies to support the long-term visions of the Agency's IRM program, and the Agency's Strategic Plan. EPA will avoid operating in a reactive mode, and strive to achieve long-term results. EPA will continually review and measure the value and success of our information resources, and quantify their support of the Agency's mission and goals.

Vision Support:

Only through proper planning and forethought can EPA achieve its long range vision for the Agency. Mission-based information and technology architectures, a solid IRM foundation, data integration, and external access capabilities take time to become a reality. By committing to stay the course, EPA's vision of IRM supporting the Agency will be accomplished. Adequate and appropriate planning will help eliminate funding shortages for IRM initiatives, and avoid duplicative, incremental, and independent IRM implementations. Effective and consistent planning will ensure long-term financial support. Long-term planning and budgeting will establish more accountability for IRM projects, and help managers look at the entire life cycle of information and systems. Adequate tracking will enable EPA to account for its IRM expenditures, and enable the Agency to measure and learn from successes and failures. Appropriate consideration of IRM in the legislation process guides EPA towards strategic use of information.

EPA's mission and vision are not accomplished overnight. EPA conducts research that may take years, yet is necessary to lay a sound foundation for the strategies, laws, and regulations EPA will adopt to protect the environment and human health. A long-term commitment to management of EPA's information resources is essential to the Agency's long-term commitment to the environment.

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Chapter 5

CORE IMPLEMENTATION STRATEGIES

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CORE IMPLEMENTATIO

THE CORE IMPLEMENTATION STRATEGIES SET THE DIRECTION FOR THE AGENCY IN IMPLEMENTING ITS IRM VISION.

The following *core implementation strategies* define the areas in which the Agency must focus its activities to successfully implement its IRM vision. EPA has defined its core implementation strategies to focus the Agency's efforts and direct its resources to fully implement the Agency's IRM vision. These strategies represent the specific actions the Agency will take to achieve the direction defined by the IRM vision.

- **PUBLIC ACCESS STRATEGY**
- **PUBLIC ACCESS METHODS**
- **INFORMATION LOCATOR**
- **KEY IDENTIFIER STANDARDS**
- **SPATIAL ANALYSIS SYSTEMS**
- **TARGETED TRAINING**
- **DESKTOP CAPABILITIES**
- **EXTERNAL CONNECTIVITY**
- **DATA REQUIREMENTS**
- **INTEGRATED PLANNING**

BACKGROUND

The core implementation strategies presented on the following pages describe the initial and crucial steps EPA must undertake to achieve the goals of the IRM vision. These core implementation strategies are the building blocks that establish the foundation — the IRM vision — to support the mission of the Agency. The chart in Appendix C illustrates the relationships between the core implementation strategies and the IRM vision.

To ensure that these strategies align with the direction of the Agency and are achieving their intended purpose, the Agency will evaluate the ongoing activities for each of these strategies. The implementation status and appropriate funding for the core implementation strategies will be reviewed periodically to demonstrate that EPA is acting as a wise steward of its resources.

PUBLIC ACCESS

EPA WILL ESTABLISH A POLICY AND STRATEGY FOR PUBLIC ACCESS

To increase the public's involvement in environmental decisions, EPA will establish a policy and strategy for improving the public's access to, and understanding of, environmental information. The public access policy will demonstrate a clear commitment to disseminating environmental information and set the priority for public access within EPA's activities. The public access policy statement will address access costs, access equality, environmental justice needs, ethics, partnerships, and security. The strategy will define roll-out steps (e.g., notifying data providers that their information will be accessible and actively disseminated), access methods (e.g., RTK Net, Internet), dissemination methods (e.g., news media and public information centers), implementation costs and options, and user support options. EPA will announce a set of Agency initiatives in support of the public access strategy.

Vision Support:

Establishing a policy statement on Public Access and Information Dissemination will guide Agency efforts to ensure that a public access and information dissemination program is implemented. An implementation strategy demonstrates commitment by senior management to the effort and communicates the importance of including public access considerations in all EPA information resource management activities.

PUBLIC ACCESS

EPA WILL ESTABLISH A TARGETED SET OF METHODS FOR PUBLIC ACCESS TO EPA INFORMATION

EPA will reduce the effort required to access and obtain Agency information. EPA has developed many innovative methods of information dissemination and will continue to explore new approaches while public access policy and targeted access methods are developed. To improve EPA services, the Agency will define and establish public access methods targeted to key audiences and for specific types of material. For example, EPA will develop methods for disseminating reports on environmental indicators that target the appropriate audience for these indicators. EPA will establish Agency-wide public access methods and form a consolidated strategy for marketing EPA's information.

EPA will establish an electronic, integrated cross-media access tool (e.g., RTK Net, Gateway, etc.) for use by the general public to access basic environmental data. Electronic access methods such as Internet, commercial on-line services, and bulletin boards will be available and targeted to the appropriate audiences.

The Agency will also offer non-electronic interfaces to provide access to, and dissemination of, EPA information. EPA will establish an expanded Public Information Center (PIC) in a highly visible, high traffic area at the new EPA Headquarters location as soon as possible. All Agency PICs, through coordination with the Agency libraries, will serve as "storefront" information distribution outlets at each Agency site. Bulk dissemination of publications, disks, CD ROM, and other appropriate media will be managed through a centralized distribution service to minimize cost and ensure distribution expertise.

Vision Support:

EPA's information dissemination activities will no longer be a fragmented process characterized by multiple uncoordinated contact points. The fragmented nature of the Agency's dissemination activities has served to frustrate public access efforts. Investment in a set of specific access and dissemination methods for electronic, "storefront," and bulk distribution of EPA information will improve public access and help to reduce costs. EPA will also be able to identify the methods that most accurately target the experience level and information requirements of those requesting information.

INFORMATION

EPA WILL ESTABLISH AN INFORMATION LOCATOR FOR THE AGENCY'S INFORMATION

A locator, like a card catalog, answers the question: "What is available and where is it?" EPA will establish a locator capability to facilitate searches of EPA information by EPA staff, the public, and other partners. EPA will compile a comprehensive inventory of its information assets using existing inventories such as the Information Systems Inventory (ISI), Access EPA, On-Line Library System, and card catalogs. The locator, like a card catalog, will be indexed in a meaningful fashion (e.g. by facility, geographic area, commercial products, corporation, chemical, etc.). The inventory of EPA information assets will provide descriptive information (metadata) regarding the original purpose, source, and limitations of the data. The locator services will be compatible with the Government Information Locator Service (GILS) and provide pointers to external locator systems such as National Oceanic and Atmospheric Administration's (NOAA's) locator system.

Vision Support:

A locator system is fundamental to any effort to provide the public and EPA's partners with access to Agency information. In order for information to be accessible, both internal and external users must be able to identify what exists and where it can be located. The locator system will provide library type support to locate and obtain the information necessary for all users of environmental data.

KEY IDENTIFIER

EPA WILL IMPLEMENT KEY IDENTIFIER DATA STANDARDS

EPA will validate, implement, and enforce the following key identifier data standards:

- Facilities/Sites (Facility Identification),
- Spatial locations (latitude and longitude),
- Regulated substances,
- Industrial sectors (Standard Industrial Codes (SIC)),
- Chemicals (CAS),
- Groundwater minimum set of data elements, and
- Organizations (Dun and Bradstreet).

For each key identifier, EPA will develop individual implementation strategies and will prioritize their implementation. The Agency will pay careful attention to the scope of these implementation efforts. EPA will identify other critical, widely used information areas where standardization of data identifiers would provide wide benefits.

This implementation strategy will be pursued on an Agency-wide basis to provide the incentive and support necessary for individual offices to budget for this effort. Agency-wide implementation of these standards will maximize the benefits to individual Agency offices, our external partners, and the general public.

EPA will utilize its budget, planning, procurement, and grant processes to ensure that both internal and external data suppliers comply with the data identifier standards. The Agency will utilize mechanisms such as cross-media reports developed from disparate databases to check and determine success in the use of key identifier data standards.

Vision Support:

EPA's information cannot be easily used by secondary users in its current fragmented, non-integrated state. Secondary users often need access to information that is grouped in aggregate and/or cross-media forms and organized according to common identifiers such as facility identification (ID), chemical abstract number, or spatial location. Implementing the data identifier standards will allow internal and external users secondary use of information. Use of common information identifiers will enable EPA and its partners to effectively access and combine the financial, programmatic, and environmental information needed to manage for environmental results at all levels.

The use of common data identifiers will also permit the Agency to collect and disseminate environmental data more effectively. For example, integrated reports on the state of the environment would be easier to produce and disseminate from an aggregated, cross-media data group than from several disjointed program-specific data sources. By using common data identifiers, partners such as states, will be able to easily access and combine EPA and state data to produce state and local reports. This ability to combine data facilitates such efforts as the production of "report cards" on the environment.

Implementing and enforcing standards for key identifiers will allow EPA to integrate reporting requirements. The ability to integrate reporting requirements will ease the burden on EPA's partners by not asking them for the same data in multiple formats and by consolidating reporting.

This core implementation strategy is required to ensure full implementation of five of the eight IRM vision elements. This strategy is critical to ensuring public access to EPA data, access by EPA staff to the data they need to do their jobs, the ability to collect and manage data to achieve environmental results, and the reduction in the reporting burden for EPA's partners. It is one of the most fundamental strategies for the implementation of the Data Integration IRM vision element: "EPA will ensure its data can be integrated to support comprehensive environmental protection and public access to environmental information."

SPATIAL ANALYSIS

EPA WILL PROVIDE ITS EMPLOYEES WITH THE CAPABILITIES TO ANALYZE LOCATION-SPECIFIC, MULTI-MEDIA PROBLEMS AND MANAGE GEOGRAPHIC INITIATIVES

EPA is undergoing an evolutionary change to focus on locations in addition to its traditional focus on programs. The Agency needs new analytical and management approaches to support this evolution. Regardless of whether the "location" is an ecosystem in need of protection or an urban area in need of restoration, EPA must improve the manner in which it brings together the location's health, environmental, regulatory, and socio-economic data.

EPA will provide a full set of geographic management and analysis capabilities to all employees who need it. In order to provide these capabilities, the Agency will make the necessary data accessible in useable formats and distribute analytical approaches for interpreting that data. Agency policies regarding data collection, documentation, and transfer will support these goals. EPA will coordinate its efforts, to the extent possible, with GIS initiatives in other Federal agencies.

EPA cannot provide the full set of geographic management capabilities to its partners due to cost. However, EPA will provide access to geographic management data, provide analytical approaches to EPA partners, and share basic training and developments. EPA will examine the forms of geographic information management support that the Agency currently provides in order to be sure that they conform to this core implementation strategy. EPA will also provide locational information to the public in a convenient and user-friendly format.

Vision Support:

The EPA's most important internal information goal is the integration of all data that pertains to a specific spatial location. All users who make judgements about spatial locations need to have access to locational data of known accuracy and appropriate analytical tools. This core implementation strategy must be implemented in close conjunction with the fourth core implementation strategy: "EPA Will Implement Key Identifier Standards."

TARGETED

EPA WILL ESTABLISH A TARGETED IRM TRAINING AND ORIENTATION PROGRAM

EPA will establish training and orientation programs to ensure that its information resources are utilized as efficiently and effectively as possible. EPA will establish information resources training for three specific audiences: EPA employees, IRM staff, and regulation writers. EPA employee training will focus on providing awareness of EPA's information stewardship roles and information partnership roles and using data locators to find information. IRM staff training will include the skills IRM staff need to understand the concerns of the regulation development community and work together with regulation writers to identify information sources. Training for regulation writers will include information on internal and external information resources.

EPA will continue to invest in providing technical assistance to its partners. Emphasis will be placed on providing assistance to state partners, because they are co-implementors of many EPA programs. EPA will work to provide its partners with access to EPA's IRM expertise.

The Agency will also provide appropriate IRM training to the public. The training will provide awareness of the environmental information available inside and outside the Agency and provide information about accessing EPA's resources. EPA will investigate innovative ways to provide training to the public within available resources.

Vision Support:

Training programs are effective agents of cultural change that can improve EPA's ability to implement the Agency's IRM Strategic Plan. Well trained staff will be able to use information resources and technology effectively and efficiently to manage for environmental results. An IRM-knowledgeable EPA workforce will be better information stewards. Data collection decisions will be enhanced as trained IRM personnel help program managers determine data requirements and identify information resources as regulations are developed.

A carefully constructed training program will ensure that the public and EPA partners know how to identify, locate, and access EPA's information and services. A knowledgeable public will be more

effective in using Agency information and other IRM resources and will deal with the Agency from an informed perspective.

DESKTOP

EPA WILL PROVIDE ITS EMPLOYEES WITH THE ESSENTIAL SET OF DESKTOP CAPABILITIES

EPA will provide its employees with a core set of desktop computing and communications tools to access EPA information. EPA will establish a list of recommended minimum computing and communications tools (along with available options) that are targeted to user responsibilities. The Agency will also define the relative priorities of each desktop capability.

In general, "essential" desktop capabilities are presumed to be a baseline capability (e.g., a PC capable of word processing, LAN connectivity, Internet access, and voice communications) and any special tools necessary for an employee's job function. (A small number of employees' jobs do not require computers; however, the presumption will be that all employees need desktop capabilities unless clear and specific reasons indicate that computers are not necessary.)

The Agency will continuously upgrade its employees' desktop capabilities as necessary to provide access to Agency-standard applications and meet an individual users' special needs. EPA will also institute a corporate approach to LAN installation, service, and support to provide the basic infrastructure for electronic communications and workgroup software for document sharing.

Vision Support:

A core set of desktop computing and communications tools will empower EPA's workforce by providing them with the access to information that is necessary to accomplish the Agency's mission. EPA's ability to provide its personnel with core computing and communications capabilities is critical to achieving the Agency's Electronic Management IRM vision element. EPA cannot mange electronically if some of its staff cannot access the electronic environment. EPA's basic computing capabilities and electronic network will enable effective communications within the Agency and between the Agency and its external partners.

DATA

EPA WILL DEFINE DATA REQUIREMENTS, GAPS, AND ALTERNATIVE SOURCES

EPA will clearly identify what data is required to meet specific Agency and program goals. By comparing the set of currently available data with the set of data required to meet specific Agency and program needs, the Agency will be able to identify two types of data: data that is needed but is not currently available (i.e., data gaps); and data that should no longer be collected.

The Agency will identify possible sources for data that is not currently available, with an emphasis on access to alternative sources rather than new data collection efforts. EPA will then establish access or collection mechanisms to secure required data.

The efforts necessary to define data requirements, gaps, and alternative sources are an essential part of defining the current and future (or target) Agency data architecture. These efforts will be carried out on a regular basis. Careful attention will be given to defining the purposes of the data to be collected and to quality assurance concerns.

These efforts will be carried out in close coordination with EPA's partners. In order to fulfill this core implementation strategy, programs must define their specific data requirements, currently available data, and potential data sources. The Agency will pay special attention to critical information that is used by a range of programs. EPA will define specific data requirements, currently available data, and potential data sources for the information needed for EPA-wide, government-wide, or international analyses. EPA will focus its efforts on defining information that can be used at differing scales to meet a variety of needs. Information that will be used on an Agency-wide basis will be collected or obtained through an Agency effort, not through program-specific efforts.

EPA will carefully coordinate with its partners, especially other Federal agencies and the states, to build the base layers of information needed to support geographically oriented analysis and decision making. Examples of base information that are important to EPA include social, economic, demographic, and industrial sector information, as well as information on the condition of ecological and environmental resources. While some information sharing among EPA partners is occurring, EPA will work to increase information sharing.

EPA will continue efforts to coordinate environmental data issues with other agencies and countries through activities such as sponsoring the Interagency Group on Environmental Data and participating in the Interagency Sustainable Development Indicators Initiative. EPA will continue its work with Federal data standards groups and other bodies which assist EPA in defining and meeting its information needs.

Vision Support:

Before EPA can establish access to the information it needs, it must identify its information requirements and information sources. Access to needed information is essential to all facets of environmental decision making, including reporting on the state of the environment, defining and measuring progress on environmental goals, and developing strategic plans. Access to appropriate information will support EPA and its partners' efforts at the international, national, regional, state, and local levels. This information will provide critical support for EPA and its partners' activities related to managing for environmental results, environmental justice, ecosystem protection, and pollution prevention.

By carefully evaluating data requirements and collection efforts and emphasizing the use of existing data, EPA will reduce the potential for duplicative data collection and therefore use its resources in a more cost-effective manner. The efforts required to define Agency data requirements will reduce the data

reporting burden on EPA's partners. EPA will be able to analyze its data collection activities to ensure that its partners are not reporting unnecessary or duplicate data.

EXTERNAL CONNECTIVITY

EPA WILL ESTABLISH THE NECESSARY CONNECTIONS TO EXTERNAL PARTNERS AND OTHER SOURCES TO ACCESS NEEDED DATA

EPA will establish methods for access to external partners' data, including other Federal, state, tribal, local, and international agencies, and commercial sources. Access methods will include electronic connectivity through direct telecommunications links, public access mechanisms like Internet, and EDI. Purchasing methods will be identified for acquiring IRM resources, data, and materials from commercial and non-commercial sources. Connectivity will be enhanced by a locational base of information, maintained by EPA's libraries, regarding the information available from other agencies and other sources.

Vision Support:

Establishing linkages will ensure timely, easy access to a full spectrum of information resources. Knowledge of the existence or availability of these resources will reduce duplicate data collection. Essentially, EPA will be part of the National effort to build the data superhighway which will benefit all EPA's partners and EPA as information is made more easily available. Improved external connectivity will also ease the burden of reporting requirements on groups that provide much of EPA's data—states and tribes.

INTEGRATED

EPA WILL INTEGRATE IRM PLANNING WITH THE BUDGET PROCESS

EPA will integrate IRM planning and the budget process and will establish IRM line items in each office budget. To create better accountability for IRM spending, IRM projects will be consistent with approved IRM plans and budgets. EPA will establish a working capital fund to reduce year to year funding problems for major IRM cost centers. The Chief Financial Officer (CFO) and the Designated Senior IRM Official will have responsibility for directing this process. Senior Budget Officers (SBOs) will coordinate with the Senior Information Resources Management Officers (SIRMOs) in the program offices.

Vision Support:

Integration of IRM planning and the Agency's budget process will fulfill Federal requirements, ensure that Agency IRM initiative funding decisions are clearly understood and made by senior management, and ensure that IRM is planned and accounted for as an essential element of program initiatives and operations. This core implementation strategy also provides a process to ensure IRM projects are

planned in light of budget constraints, and that IRM funding needs are considered during budget preparation. Integration of IRM planning and the budget process can also improve the Agency's ability to enforce standards and manage its information assets.

PERFORMANCE

EPA WILL ESTABLISH PERFORMANCE MEASUREMENTS

EPA will establish performance measurement criteria for the Agency's IRM program and IRM initiatives. Performance measurements will be used to measure the progress of the Agency toward implementing the vision established for the management of EPA's information resources and ultimately in fulfilling its IRM mission. These performance measures will focus on the outputs and outcomes of the information management efforts in support of the Agency guiding principles, with specific emphasis on customer satisfaction, efficiency, and stewardship. EPA will establish measurement criteria in order to gather data that is quantifiable, relevant, reliable, standard, and verifiable. A "Report Card" will be generated to show EPA's accomplishments, document success at meeting planned objectives, lessons learned, and recommendations for future improvements. Benchmarking partnerships with other Federal and private partners will be used to provide IRM managers with standards to evaluate their services and stewardship roles, allowing internal processes to be modified as necessary to achieve successful results.

Vision Support:

Performance measurements will enable the Agency to determine how successful the management of EPA's information resources has been in achieving the IRM vision and supporting the mission and guiding principles of the Agency. These measures provide the Agency with the ability to make appropriate adjustments to ensure a solid foundation and efficient use of Agency resources in meeting the needs of the Agency and programs. Performance measures support the GPRA orientation on results based outputs or outcomes rather than results based on inputs, i.e., how much was spent.

SENIOR MANAGEMENT

EPA WILL INCREASE SENIOR LEVEL MANAGEMENT ATTENTION TO IRM

EPA will make four key efforts to increase senior level attention to IRM. EPA will establish a Chief Information Officer (CIO), responsible for Agency-wide IRM, with mission critical duties at an Assistant Administrator level. EPA will continue current efforts to maintain a viable Executive Steering Committee for IRM to guide IRM planning and decision making. The CIO will establish a Data Administrator to guide use of data as an Agency asset. EPA will continue an external stakeholders group of senior managers to obtain and consider the needs of stakeholders.

Vision Support:

By these measures, EPA will convey the importance of IRM to the success of the Agency's mission and increase the management of information resources as an Agency asset. A senior management champion and an Executive Steering Committee will ensure IRM is well managed and meets mission needs.

STAFFING

EPA WILL STRIVE TO ENSURE ADEQUATE AGENCY STAFFING FOR IRM

EPA will ensure that adequate staff resources are available to devote sufficient time to IRM issues and that IRM staff have the background and capabilities necessary to meet the IRM needs of the Agency. EPA programs will train or otherwise acquire adequate IRM staff with the necessary skills to guide program implementation of IRM initiatives and ensure adequate user support. EPA programs will work to budget for appropriate staff to support IRM activities.

Vision Support:

By ensuring that Agency IRM staffing needs are met, EPA will improve its ability to meet Federal and Agency IRM requirements and ensure adequate institutional IRM skills are developed and retained.

ELECTRONIC DATA

EPA WILL EXPAND THE USE OF ELECTRONIC METHODS TO RECEIVE DATA FROM PROVIDERS

EPA will establish procedures and guidance, especially within the regulation development process, to encourage electronic data transfer. EPA will create effective electronic reporting mechanisms and expand their use. EPA will adopt non-proprietary and widely used electronic reporting mechanisms to ensure the widest possible use. EPA will continue to explore and pilot use of EDI as one means of electronic reporting.

Vision Support:

Fully utilizing electronic approaches to transferring data will ease the burden on information generators by establishing a lower cost method for transmitting data. This process will also increase the accuracy and usefulness of captured data by eliminating potential errors from re-keying of the data submitted.

PAPERLESS PROCESS

EPA WILL IMPLEMENT PAPERLESS PROCESSES FOR ADMINISTRATIVE FUNCTIONS

EPA will review active or planned reengineering efforts and other internal processes to identify an opportunity to implement electronic management practices in a highly paper-intensive business process. If a reengineering project is selected, EPA IRM staff will work with the reengineering team to define the project scope and goals. EPA will automate at least one process from "cradle to grave" to demonstrate the potential of eliminating paper forms in appropriate situations. EPA will also pilot electronic commerce projects with external partners. The external pilot will collect, process, disseminate and store information so that EPA need not exchange hard copy documents or perform duplicate data entry.

Vision Support:

The first step toward electronic management of EPA is to actually select and implement an electronic solution to an existing manual, paper-based process. This project will serve as a learning process for reengineering efforts, and demonstrate the benefits of electronic management in achieving the paperless office. EPA's efforts toward reengineering are critical in supporting the Agency's Common Sense initiative. EPA will be able to reengineer and move toward electronic management in support of the Agency's efforts to work "cleaner, cheaper, and smarter."

SOUND IRM

EPA WILL MAINTAIN AND UPDATE ITS INFRASTRUCTURE, AS NECESSARY, TO SUPPORT THE IRM VISION STRATEGIES

EPA will plan for and manage its IRM infrastructure to allow the Agency to embrace its guiding principles and utilize comprehensive approaches for protecting human health and the environment. EPA's IRM infrastructure will provide direction to program offices as they migrate from single media environmental programs and systems to cross-media programs and systems. Equally as important, the Agency's IRM infrastructure will help guide program office technology purchases to ensure compatibility with other Agency IRM investments and data integration efforts.

Many of the Agency's systems are aging and will require major redesign to upgrade them in the coming years. This upgrading will be important not only to maintain the functionality for the systems' users, but

to better enable the Agency to meet its other IRM goals. Without adequate long-term support for our base information systems, new initiatives will clearly fall short of our expectations. This also requires the continuing development of a technical planning process to define and select the appropriate infrastructure.

Vision Support:

Upgrading EPA's information systems will require substantial investments in the Agency's infrastructure including: LANs, WANs, and capacity. These purchases will also enable EPA to support other Agency IRM vision elements such as Public Access, Communications, Data Integration, and Electronic Management.

SUPPORT OF VISION ELEMENTS

The matrix in Appendix C indicates the relationship between each core implementation strategy and each of the eight IRM vision elements. An implementation strategy can have one of three possible relationships with a vision element. A core implementation strategy can:

- be essential to the vision element's implementation; that is, the vision cannot be accomplished without the implementation of this core strategy;
- directly support a vision element's implementation by providing key capabilities, tools, or information necessary to the full achievement of the vision; or
- indirectly support a vision element's implementation by providing basic capabilities that allow greater achievement of the vision.

Every core implementation strategy is related in some way to every vision element.

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Chapter 6

PERFORMANCE MEASUREMENT AREAS

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INTRODUCTION

EPA is committed to measuring the progress of its core IRM implementation strategies and projects to assess its success in supporting the Agency and programs. Measuring progress is an accepted tool of good management—"if you don't measure results, you can't tell success from failure." [12]

> It may seem amazing to say, but like many big organizations, ours is primarily dominated by considerations of input—how much money do we spend on a program, how many people do you have on the staff, what kind of rules and regulations are going to govern it; and much less by output—does this work, is it going to change people's lives for the better?
>
> President Bill Clinton
> *Remarks at the signing of GPRA: 8/3/93*

As part of the Agency's commitment to measuring performance, EPA has been engaged in multi-agency efforts to identify the best methods for measuring the performance of IRM within a Federal agency. One key to successful measurement is understanding IRM's role as a support function—IRM *provides support* to programs which, in turn, work toward fulfilling the Agency's mission. By themselves, IRM efforts generally do not fulfill an agency's mission—information resources are one of many types of resources that collectively support program objectives. Consequently, while measuring performance for programs can be a difficult process, measuring the performance of a support function such as IRM adds an additional layer of difficulty to performance measurement. Experience within other agencies has shown that the most successful IRM performance measurement programs are those closely tied to an agency-wide performance measurement process. Most IRM measurement efforts measure the IRM support function in terms of its effectiveness and efficiency in contributing to the success of the Agency's programs.

Successful performance measurement for IRM requires the involvement of all the Agency's customers, stakeholders, and partners. To fully engage this process, the entire IRM community must be committed to identifying performance indicators and measurement goals for their organization and gathering and analyzing performance data.

Measuring EPA's IRM performance will be an iterative process. The steps to implementing this process within EPA will include:

- defining the areas in which the Agency will measure performance,
- identifying the audience—*the customer*—for each measurement area,
- identifying the corresponding detailed performance measures and suites of measures,
- gathering performance data, and
- refining the measures so that they are truly indicative of success.

[12] David Osbourne and Ted Gaebler, *Reinventing Government* (Reading, Mass.: Addison-Wesley, 1992).

EPA's IRM performance measurement process will be based on the strategic vision elements defined for information resources management within the Agency. Initially, the Agency will begin to measure the progress of the projects that are specifically aimed at the strategic vision elements, including public access and data integration. The Agency will measure the effectiveness of its IRM solutions to determine if these IRM projects are being accomplished according to plan and if the approach selected is achieving the strategic vision.

This chapter represents the Agency's first step in establishing a successful IRM performance measurement program. EPA has begun its performance measurement program by identifying the initial IRM performance measurement areas by vision element needed to establish a framework for measuring the IRM contribution to the Agency's mission and the satisfaction of IRM customers. This chapter describes the areas identified by EPA for which performance will be measured and for which detailed indicators and performance goals will be defined. These performance measurement areas focus on customer satisfaction as a primary method of measuring success.

Based on the measurement areas defined in this plan, EPA's next task is to develop specific performance indicators and measurement goals. The challenge will be to implement appropriate performance measurement systems that provide quantifiable, relevant, reliable, standard, and verifiable results that reinforce the desired outcomes. The information to be gathered for performance measures must also be feasible: it must be captured within the time, resource, and organizational constraints of the Agency.

EPA will work with the Agency's IRM customers to define specific indicators and measurement goals to be used as performance measures for the performance measurement areas. EPA will choose one crucial area identified by its customers and build its success in measuring performance. As EPA becomes more knowledgeable about the process and collects data in the selected areas, the Agency will revise, enhance, and/or replace performance indicators as necessary. The Agency will add additional measurement goals as it moves forward in its Agency-wide performance measurement process.

IRM STRATEGIC PERFORMANCE MEASUREMENT AREAS

Public Access

- Improved customer ability to access EPA information
- Increased customer satisfaction with access provided
- Increased value of EPA information to customers

EPA Access

- Increased customer knowledge and use of available tools
- Increased customer satisfaction with access to EPA information and available tools
- Increased value of EPA information to decision makers

Data Integration

- Increased ability to integrate information resources

Environmental Information

- Increased ability to assess progress of programs in achieving environmental goals at all levels

Solid IRM Foundation

- Improved quality of EPA's IRM program in relation to industry's IRM best practices
- Improved management satisfaction with IRM stewardship and governance

Reduce Reporting Burden

- Improved stakeholders' satisfaction with reporting process
- Reduced burden on reporting community

Electronic Management

- Increase in administrative processes conducted electronically
- Decreased staff time required to complete administrative processes
- Reduced total time to complete administrative processes

Communications

- Increased customer access to and satisfaction with communications abilities: reliability, ease of use, and range of services provided

PUBLIC ACCESS

EPA WILL ACTIVELY DISSEMINATE AND PROVIDE ACCESS TO ITS INFORMATION TO EDUCATE AND EMPOWER ITS PARTNERS AND THE PUBLIC: If EPA succeeds in this, it succeeds in delivering environmental information to its customers—its environmental partners and the general public. However, success means more than just putting the information in the public domain: it means providing the right kinds of access to the right kinds of environmental information. To accomplish this, EPA must identify the customer base that EPA is trying to serve, strive to reach out to new customers—people that are not familiar with EPA's information holdings, ensure that all types of customers are satisfied with their ability to access the Agency's information, and provide valuable, useful information to all customers. Therefore, to measure the Agency's success in achieving this target, EPA will focus on the following measurement areas:

- Improved customer ability to access EPA information
- Increased customer satisfaction with access provided
- Increased value of EPA information to customers

Focusing on customer satisfaction is the key to measuring EPA's success in achieving full, equitable public access.

EPA ACCESS

EPA EMPLOYEES WILL HAVE THE TECHNICAL RESOURCES AND MEANS TO ACCESS THE INFORMATION NEEDED TO PERFORM THEIR DUTIES: To achieve its mission, EPA's employees must have access to the Agency's information holdings in order to make sound decisions. Measuring EPA's success in providing employees the resources they need to perform their duties requires the Agency to determine whether its IRM customers—EPA employees—can access information of value in decision making and if they have the knowledge and the tools needed to use that information. EPA will measure its progress for this strategic goal by focusing on the following performance measurement areas:

- Increased customer knowledge and use of available tools
- Increased customer satisfaction with access to EPA information and available tools
- Increased value of EPA information to decision makers

Ensuring access to valuable EPA information will enable EPA employees to support the Agency's expanding focus on comprehensive cross-media environmental strategies.

DATA INTEGRATION

EPA WILL ENSURE ITS DATA CAN BE INTEGRATED TO SUPPORT COMPREHENSIVE ENVIRONMENTAL PROTECTION AND PUBLIC ACCESS TO ENVIRONMENTAL INFORMATION: As the Agency develops comprehensive approaches to environmental protection, the Agency must have the ability to integrate and coordinate information. In addition, according to one report, to fully support access by the public and EPA staff, the data must be integrated across media.[13] The key issue in achieving the Agency's strategic vision is whether EPA is moving toward the integration of its environmental data. Therefore, the performance measurement area for data integration is:

- Increased ability to integrate information resources

The Agency has committed to integrating its data. EPA's first step toward integrated data is its efforts to ensure that all Agency systems contain key identifiers. Continually assessing the Agency's progress in its ability to integrate its data is critical to ensuring that EPA remains focused on this vision.

ENVIRONMENTAL INFORMATION

EPA WILL EFFECTIVELY COLLECT AND MANAGE THE INFORMATION THAT THE AGENCY AND ITS PARTNERS REQUIRE IN ORDER TO MANAGE FOR ENVIRONMENTAL RESULTS: EPA and its partners require information on the effects of past activities on human health and the environment in order to model the effects of current and proposed environmental actions. EPA employees must have access to quality information in a timely manner in order to make decisions that influence the environment. To successfully mange for results, EPA must first set environmental goals at all levels within the Agency: Agency-wide, by program, and by region. Secondly, the Agency must have the information needed to assess its progress toward achieving these goals. Therefore, the key area in which the Agency will measure its performance for this strategic vision is as follows:

- Increased ability to assess progress of programs in achieving environmental goals at all levels

As EPA undertakes various projects to implement its core IRM strategies, it will measure these efforts to determine their success in making EPA more efficient and effective at assessing program success.

[13] Report of the IRM Strategic Planning Task Force, NACEPT, EIAC, *Using Information Strategically to Protect Human Health and the Environment; Recommendations for Comprehensive Information Resources Management*, September 1994.

SOLID IRM FOUNDATION

EPA WILL ESTABLISH A SOLID IRM FOUNDATION TO EFFICIENTLY MEET THE AGENCY'S EVOLVING MISSION AND PROGRAM NEEDS: To effectively meet mission- and program-level requirements, IRM requires a solid foundation: it must have strong management support, the IRM staff must be capable and well-trained, and sound techniques must be used throughout the Agency for managing information resources. Sound techniques for IRM have evolved within the private sector as industry has risen to meet the challenges of the economy and new technology. The Agency must demonstrate that its techniques for IRM rival the best practices found in government and industry. Furthermore, since IRM is ultimately a support function that assists the Agency and programs in achieving environmental goals, management satisfaction with the support provided is an important measure in assessing the effectiveness and success of the IRM program. Consequently, EPA will measure its performance in the following key areas:

- Improved quality of EPA's IRM program in relation to industry's IRM best practices

- Improved management satisfaction with IRM stewardship and governance.

Assessing performance in these areas will ensure that the Agency's information resources are effectively and efficiently managed to assist the Agency in meeting its environmental goals.

REDUCE REPORTING BURDEN

EPA WILL IMPROVE ITS DATA COLLECTION QUALITY AND REDUCE REPORTING BURDENS THROUGH INNOVATIVE METHODS: As stated in the *Common Sense Initiative*, EPA is committed to reducing the burden on its stakeholders and partners. If EPA succeeds in implementing innovative data exchange methods with its partners, the burden of costs and time associated with collecting and reporting data will be reduced, the exchange of information will be more timely, and the information exchanged will be of greater accuracy and integrity. To ensure that EPA is moving towards this strategic goal, performance measurement must include a focus on the following areas:

- Improved stakeholders' satisfaction with the reporting process

- Reduced burden on reporting community

The satisfaction of stakeholders and partners with EPA's reporting process and their reporting burden will provide an indicator to ensure that EPA's resources remain focused on only those areas that provide a true reduction in reporting burden.

ELECTRONIC MANAGEMENT

EPA WILL MANAGE ELECTRONICALLY TO EMPOWER STAFF, REDUCE COST, AND IMPROVE MANAGEMENT RESULTS: Effective electronic management is critical to ensuring that EPA has the information it needs in an accurate, timely, and cost-effective manner. Electronic management, when successful, ensures that EPA staff are devoted to activities that improve the environment and not spending their time fulfilling administrative requirements. The key areas in which the Agency will measure its performance in achieving true, effective electronic management include:

- Increase in administrative processes conducted electronically
- Decreased staff time required to complete administrative processes
- Reduced total time to complete administrative processes

Successful implementation of this vision element will allow employees to devote more staff time to achieving environmental goals. Additionally, as EPA fully implements electronic management, EPA will experience a reduction in paper consumption and realize savings and increased data quality.

COMMUNICATIONS

EPA WILL ENABLE "PEOPLE-TO-PEOPLE" ELECTRONIC COMMUNICATIONS: If EPA succeeds in enabling "people-to-people" communications, it succeeds in developing and implementing a technology infrastructure that integrates state-of-the-art voice and electronic mail communication capabilities throughout the Agency. As a support function, IRM must ensure that its customers—EPA employees and partners—have full access to a reliable, user-friendly communications infrastructure. Therefore, in assessing performance in this vision area, the key measurement should be:

- Increased customer access to and satisfaction with communications abilities: reliability, ease of use, and range of services provided

The satisfaction level of employees and partners regarding the availability, usefulness, and quality of electronic communications will provide valuable feedback about the utility of the communications infrastructure. Customer satisfaction surveys will enable EPA to focus resources on those areas that provide the most benefit to its customers.

Performance measurement will be a key step in ensuring that EPA manages its information resources effectively and efficiently both in supporting Agency programs and in successfully implementing its IRM projects. To accomplish both of these goals, EPA's performance measurement program needs many measures to assess its performance. A full suite of measures must be used to ensure a healthy balance exists between successfully implementing IRM projects and supporting EPA's programs. For example, while EPA is committed to reducing the burden on reporters, it must still ensure it collects the information needed for the progress of its programs. Therefore, the Agency must balance any reduction in reporting requirements against information collection requirements needed to fully support program operations.

> "What ever is counted, counts.....What is counted shapes and influences the behavior of the

The Agency's performance measurement process will provide EPA with the ability to continually measure its progress and re-focus its efforts when necessary. As EPA gains experience and achieves success in measuring the performance of its IRM efforts, the Agency will demonstrate to its customers that it is committed to the stewardship of its financial, information, and human resources and to using these resources efficiently in fulfilling its mission.

[14] David Osbourne and Ted Gaebler, *Reinventing Government* (Reading, Mass.: Addison-Wesley, 1992).

Appendix A

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Appendix B

SUPPORT FOR THE AGENCY'S GUIDING PRINCIPLES

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APPENDIX B - SUPPORT FOR THE AGENCY'S GUIDING PRINCIPLES

The IRM vision elements provide support to many facets of the Agency's mission and its guiding principles. The matrix below illustrates how each vision element supports one or more of the Agency's guiding principles.

IRM VISION ELEMENT	***AGENCY STRATEGIC PLAN* GUIDING PRINCIPLES**						
	ECOSYSTEM PROTECTION	ENVIRON'L JUSTICE	POLLUTION PREVENTION	STRONG SCIENCE	PARTNERS	REINVENTING EPA	ENVIRON'L ACCOUNT'Y
PUBLIC ACCESS	●	●	●	⊙	●	○	●
EPA ACCESS	●	●	⊙	●	⊙	●	⊙
DATA INTEGRATION	●	●	●	⊙	●	○	●
ENVIRONMENTAL INFORMATION	●	●	●	●	●	○	●
SOLID IRM FOUNDATION	⊙	⊙	⊙	⊙	⊙	⊙	⊙
REDUCE REPORTING BURDEN	⊙	●	⊙	●	●	○	○
ELECTRONIC MANAGEMENT	○	○	●	⊙	⊙	●	○
COMMUNICATIONS	⊙	⊙	○	○	●	●	●

● = Essential support for Agency guiding principles

⊙ = Significant support for Agency guiding principles

○ = Indirect support for Agency guiding principles

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Appendix C

SUPPORT FOR IRM VISION ELEMENTS

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APPENDIX C - SUPPORT FOR IRM VISION ELEMENTS

CORE IMPLEMENTATION STRATEGIES	IRM VISION ELEMENTS							
	A. PUBLIC ACCESS	B. EPA ACCESS	C. DATA INTEGRATION	D. ENV. INFORMATION	E. SOLID IRM FOUNDATION	F. REDUCE RPT. BURDEN	G. ELEC. MNGT.	H. PEOPLE TO PEOPLE COMM.
POLICY AND STRATEGY FOR PUBLIC ACCESS	●	○	○	○	○	○	○	⊙
METHODS FOR PUBLIC ACCESS	●	⊙	⊙	○	⊙	○	○	⊙
INFO. LOCATOR	●	●	⊙	●	⊙	○	○	○
KEY IDENTIFIER STANDARDS	●	●	●	●	⊙	⊙	○	○
SPATIAL ANALYSIS	⊙	⊙	●	⊙	⊙	⊙	⊙	⊙
TARGET TRAINING	●	●	○	●	⊙	○	●	●
DESKTOP CAPABILITIES	⊙	●	○	⊙	⊙	○	●	●
DEFINE DATA REQ., GAPS &ALT. SOURCES	⊙	●	●	●	⊙	⊙	○	○
CONNECTIVITY TO EXTERNAL PARTNERS	⊙	⊙	⊙	●	⊙	○	○	⊙
INT. PLANNING	⊙	⊙	⊙	●	●	⊙	⊙	⊙
PERF. MEASURES	⊙	⊙	⊙	⊙	●	⊙	⊙	⊙
SENIOR MANAGEMENT ATTENTION	⊙	⊙	⊙	⊙	●	⊙	⊙	⊙
ADEQUATE STAFFING FOR IRM	⊙	⊙	⊙	⊙	●	⊙	⊙	⊙
ELEC. DATA COLLECTION	⊙	⊙	⊙	⊙	⊙	●	⊙	○
PAPERLESS PROCESS	⊙	⊙	⊙	⊙	⊙	⊙	●	○
SOUND IRM INFRASTRUCTURE	●	⊙	⊙	⊙	⊙	⊙	⊙	⊙

● = Essential support for Agency implementation strategies

⊙ = Significant support of Agency implementation strategies

○ = Indirect support of Agency implementation strategies

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